REMARKS/ARGUMENTS

The specification has been amended on page 1 to identify the cited copending patent application.

The claims have been amended in several respects. Claims 20, 21, and 24-26 have been amended to correct typographical errors. Claims 30-35, 38, 39, 41, and 44 have been cancelled. The dependencies of Claims 36 and 46 have been changed in view of cancellations or amendments to previous claims. Claim 37 has been amended to recite the embodiments having antistatic layers under the silver halide-containing image-forming layers on both sides of the support as described on page 16 (lines 19-23).

Claim 1 has been amended to define the imaging layer as a "photosensitive silver halide-containing" layer as described in original Claim 30 and on page 16 (line 21). Claim 1 has also been amended to define the antistatic layer to be directly under the image-forming layer as described on page 18 (lines 11-13 and 14-17) and that the polymer binder "consists essentially of" gelatin (Example 1, page 20). Claim 7 has been amended to be consistent with amended Claim 1.

This patent application has been rejected for a number of reasons. For simplicity, the Section 112 rejections are addressed before the Section 103 rejections.

Rejection Under 35 U.S.C. §112(1)

Claims 1-14, 19-29, 35, 38-41, 44, 45, and 48 have been rejected as lacking written description in the specification. As far as it applies to claims presently in this application, this rejection is respectfully traversed.

The Office Action alleges that the specification describes gelatin in "silver halide emulsion layers" only. Applicants respectfully disagree. While gelatin is described specifically for the preferred silver halide emulsion layers, gelatin is described generally as the preferred binder for the image-forming layers on page 12 (lines 26-27) and Applicants have provided sufficient teaching of those other image-forming layers and cited a number of references describing the appropriate chemistries. In order to expedite prosecution, Claim 1 now recites at least one "photosensitive silver halide-containing image-forming layer" that is

clearly described in the specification as containing gelatin as a binder. Such layers would include any type of image-forming layer containing silver halide including the thermally developable layers of Claim 40. It was known as of Applicants' filing date that gelatin can be used as the binder in silver halide-containing thermally developable image-forming layers [see, for example, in U.S. Patent 6,060,231 (Col. 14, lines 34ff)]. Of course, what was not known in the art at that time was that gelatin should be used as the binders in both directly adjacent silver halide-containing image-forming and antistatic layers.

For these reasons, it is believed that the rejection under Section 112(1) should be withdrawn.

Rejection Under 35 U.S.C. §112(2)

Claim 46 has been rejected as being indefinite for its improper dependency. This error has been corrected and Claim 46 is now dependent upon Claim 45.

Rejections Under 35 U.S.C. §103

Two rejections have been made under Section 103:

(1) Claims 1-14, 19-28, 30-32, 38, 41-43, and 45-48 have been rejected as unpatentable over the combination of U.S. Patent 5,766,515 (Jonas et al.) and U.S. Patent 5,370,981 (Krafft et al.).

(2) Claims 1-14 and 19-48 have been rejected as unpatentable over the combination of Jonas et al., Krafft et al., and U.S. Patent 6,077,655 (Majumdar et al.).

As far as they apply to claims presently in this application, both rejections are respectfully traversed for the following reasons.

Present Invention and Problem Solved:

A brief explanation of the presently claimed is presented here so the arguments presented below are better understood.

As the Examiner recognizes, the present invention is directed to the broad field of providing antistatic protection in various imaging materials and particularly those containing a silver halide-containing imaging layer comprising gelatin as the binder. The literature clearly suggests various locations for

antistatic materials but often the location of the layer is specific to the particular type of imaging material, imaging layer composition, antistatic components, and problem being solved. For example, as pointed out on page 5 of the application, gelatin-containing surface conductive layers have been described for use in photographic films where the silver halide-containing layer(s) are disposed underneath the surface gelatin-containing conductive layers (e.g. U.S. Patent 5,368,894, Lammers et al.).

Many conductive components of the conductive layers perform suitably without futher addenda, but in some instances, those components or the nature of the binders require "enhancement" for suitable conductivity. Many of these "conductivity enhancers" are surfactants as described on pages 5-7 on the present application. Some "conductivity enhancers" are positively or negatively charged.

While there is considerable literature describing conductive layers in silver halide-containing elements that include hydrophilic binders, not every hydrophilic binder is best suited as a binder in conductive or antistatic layers to provide all desired properties, such as retaining conductivity over time, adhesion to adjacent layers, coatability, and compatibility with all antistatic components dispersed therein.

Applicants saw a need to provide imaging materials that include at least one silver halide-containing image-forming layer disposed directly over an antistatic layer. They wanted to meet a need in the art where both of these adjacent layers have all desired imaging, conductivity, and adhesive properties, and are readily coated with compatible components.

The first choice Applicants would naturally make to achieve these goals is to formulate both silver halide-containing image-forming layer and an antistatic layer in a hydrophilic binder, such as polyvinyl alcohol, a hydrophobic binder such as a polyvinyl acetate, or a hydrophilic synthetic polymer (e.g. Krafft et al.). Yet, there is a desire to avoid using such binders.

Since many silver halide-containing image-forming layers are formulated using gelatin, it might be "obvious to try" gelatin as the binder in the antistatic layers, especially if the two layers a directly adjacent. However, for practical purposes, gelatin is not usually used as the predominant binder in

antistatic layers containing conductive particles because it readily absorbs water (i.e. it is humidity dependent) and the swelling gelatin can reduce the necessary contact of the conductive particles. As a result, the conductive particles tend to lose their antistatic properties in the presence of gelatin. The mechanism for this effect is not fully understood in the art, but it is clear that conductive particles are not always compatible in a gelatin environment as opposed to an environment containing poly(vinyl alcohol) (PVA). Thus, workers in the art have used other hydrophilic binders (e.g. PVA or synthetic polymers) in antistatic layers in place of gelatin. See, for example, Majumdar et al. that describes the use of "modified" gelatins that are graft copolymers of gelatin and an acidic vinyl polymer.

Applicants found that they could formulate and coat adjacent gelatin-containing layers in silver halide-containing imaging materials as long as the underlying antistatic layer contained the conductive polymer particles and a neutral-charge conductivity enhancer in unmodified gelatin as the only essential binder. They found that such layers exhibit desired adhesion to each other and the antistatic layer retains its conductivity despite the presence of gelatin as the binder.

Rebuttal to Rejections:

(1) The rejection based on the combination of Jonas et al. and Krafft et al. should be withdrawn because the combined teaching fails to teach or suggest the presently claimed invention.

The Office Action alleges that Jonas et al. describes conductive coatings comprising polythiophene and conductivity enhancing compounds and that such coatings can be used in photography. Jonas et al. is also said to teach the use of the hydrophilic binders from Krafft et al. Thus, the Office Action argues that it would be obvious to use the binders of Krafft et al. in the compositions of Jonas et al. to formulate the claimed photographic materials. The Office Action admits that Krafft et al. fails to disclose gelatin as a water-soluble binder but it opines that gelatin is a well known binder in the photographic art and particularly in silver halide emulsion layers. Applicants' experimental results are said to be expected in view of the art teaching, particularly in view of the generic

teaching in Krafft et al. The Office Action also argues that Applicants fail to show that polyvinyl alcohol would not work as well as gelatin.

The arguments presented in the Office Action are directed to previously claimed materials but now Applicants are claiming materials in which the at least one image-forming layer and the antistatic layer are adjacent, i.e. no intermediate layers. This is an distinguishing feature over the cited art especially since the adjacent layers have gelatin as the binder and not some other hydrophilic binder.

Jonas et al. fails to suggest that specific binders are critical or that image-forming and antistatic layers should be adjacent. This patent merely references Krafft et al. for the binder teaching. The faults of Krafft et al. are outlined in detail below.

Jonas et al. also teaches that the conductive layer can be integrated into various positions (Col. 3, lines 46-50) for the LCD's. There is no specificity given for locations or arrangements in photographic materials because the reference to photography in Jonas et al. is one cryptic sentence that gives no guidance (Col. 3, lines 13-15) and is clearly non-enabling of Applicants' required layer arrangement.

The Office Action relies upon Krafft et al. to supply the deficiencies of Jonas et al., but it is inadequate for this purpose. First of all, Krafft et al. mentions only polyvinyl alcohol as a hydrophilic binder for conductive layers. The polyvinyl acetates are hydrophobic in nature. Moreover, the reference fails to describe the use of any type of binder in the antistatic layers of the examples (show only conductive polymer and silane crosslinking agent). Thus, it clearly fails to suggest the use of gelatin (Col. 2, lines 55-59) in an antistatic layer. Krafft et al. cannot contemplate the importance of binders in antistatic layers since only two specific types are mentioned (and both hydrophilic and hydrophobic) and none are used in the examples.

Moreover, Krafft et al. fails to suggest a location for a conductive layer except on the backside (non-imaging side) of the support (Col. 3, lines 45ff and Examples). Thus, Krafft et al. fails to teach directly adjacent image-forming and antistatic layers containing gelatin as the binder.

Clearly, neither Jonas et al. nor Krafft et al. alone teaches or suggests the presently claimed invention. The combination of teachings fail in

this regard also. The combination merely suggests that imaging materials containing silver halide imaging layers should have a conductive antistatic layer containing a polythiophene and conductivity enhancer on the backside. (non-imaging side) of the support. This is not the presently claimed invention where both gelatin-containing these layers are adjacent on the imaging side. Moreover, the combination of art fails to teach that gelatin should be used in both adjacent layers. The combination of art merely teaches the use of binders other than gelatin, some of which are hydrophobic. Applicants have gone against conventional wisdom by using gelatin instead of the more humidity resistant PVA, synthetic polymers, or hydrophobic polyvinyl acetates.

Thus, Applicants believe that the combination of Jonas et al. and Krafft et al. fails to render their claimed invention unpatentable.

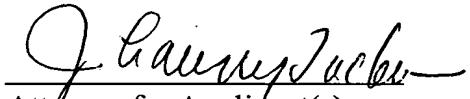
(2) The combination of Jonas et al., Krafft et al., and Majumdar et al. is similarly defective.

The Office Action relies upon Majumdar et al. (page 5) for its teaching of the use of a modified gelatin in silver halide-containing image-forming layers. It incorrectly states that Jonas et al. and Krafft et al. suggest the use of water-soluble binders, "including gelatin" in conductive antistatic layers. Neither of these two references mentions gelatin in any context and only implies its use in image-forming layers by mentioning "photographic" uses. However, this is insufficient enabling teaching of the present invention.

Majumdar et al. fails to overcome this deficiency. It actually teaches away from the use of gelatin as the binder in adjacent image-forming and antistatic layers. The use of gelatin has problems according to Majumdar et al. and the problems are solved by using a specific synthetic gelatin-graft copolymer binder in the antistatic layer. Thus, Majumdar et al. fails to recognize what Applicants unexpectedly found in using adjacent layers containing gelatin, i.e. desired adhesion and no significant loss in conductive properties in the gelatin-containing antistatic layer. Applicants' specific combination of features (type of binder in both layers and layer arrangement) are therefore critical to their invention and unobvious to a skilled artisan from the teaching of Jonas et al., Krafft et al., and Majumdar et al.

In view of the foregoing amendments and remarks, reconsideration of this patent application is respectfully requested. A prompt and favorable action by the examiner is earnestly solicited.

Respectfully submitted,



Attorney for Applicant(s)
Registration No. 27,678

J. Lanny Tucker/s-p
Rochester, NY 14650
Telephone: (585) 722-9332
Facsimile: (585) 477-1148